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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/602,002	06/24/2003	Hyun-sig Lim	1293.1702	7716

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EXAMINER

FAULK, DEVONA E

ART UNIT	PAPER NUMBER
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2615

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/05/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/602,002	LIM ET AL.	
	Examiner	Art Unit	
	Devona E. Faulk	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,7-13,17,19,21 and 23-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,3,4,7-9,13-15,17,19,21,23 and 24 is/are allowed.
- 6) ☒ Claim(s) 6,10-12,16,20 and 25-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 6.24.2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Remarks

1. The applicant has amended claims 1,4,7,13,17 and 21 with subject matter indicated as allowable in the previous office action.
2. The indicated allowability of claims 10 and 25 is withdrawn in view of the newly discovered reference(s) to Hayama et al. Bates and Jordan. Rejections based on the newly cited reference(s) follow.
3. Claims 2,5,14,15,18 and 22 are cancelled.

Claim Rejections - 35 USC § 112

4. Claims 6,10,16,20 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claims 6,16 and 20 recite "wherein the sound increase/decrease interval information is applied to part of an interval of sound that is output from the sound output system". There is no disclosure in the specification about this feature at all nor how this is done.

Claim 10 recites " A volume control method of a sound output system, the method comprising: comparing, if a user selects a volume level, a number of volume levels selected by the user with a maximum number of volume levels setable by the user in the sound output system; storing, if the number of volume levels selected by the

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user is smaller than the maximum number of volume levels, the volume levels selected by the user; and increasing the number of volume levels selected by the user by one".

The examiner is confused by the claim language. It is not clear how or why one would compare a number of volume levels based on a user choosing a volume level.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 25-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Jordan (US 5,150,404).

Regarding claim 25, Jordan discloses a volume control method of a sound output system (column 3, lines 35-38), the method comprising:

setting, by a user, a maximum number of volume levels (Jordan discloses that the number of volume levels is an arbitrary choice and that any one number of volume levels may be chosen as best suited for the application and that this is programmable at the manufacturer; implicit that someone sets the total number of volume levels ; column 3, lines 35-40); and storing each volume level selected by the user until the maximum number of volume levels is obtained (implicit; column 3, lines 35-40).

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Regarding claim 26, Jordan discloses further comprising controlling a volume level of sound output from the sound output system on a basis of an order in which volume levels selected by the user are stored (column 4, lines 8-22).

Regarding claim 27, Jordan discloses further comprising limiting the volume levels selectable by the user to a sound level between a minimum sound level and a maximum sound level that is output from the sound output system (implicit).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bates et al. (US 6,700,635) in view of Hayama et al. (US 6,760,635) in further view of Jordan et al. (US 5,150,404).

Regarding claim 10, Bates discloses a volume control method of a sound output system (Figure 3A-Figure 4), the method comprising:

Comparing, if a user selects a volume level, a volume level selected by the user with a maximum volume levels settable by the user in the sound output system (column 8, lines 21-40); storing, if the volume level selected by the user is smaller than the maximum volume level, the volume level selected by the user (column 8, lines 21-40).

Bates fails to disclose increasing the volume level selected by the user by one.

Hayama discloses increasing the volume selected by the user by one (column 2, lines 61-67). It would have been obvious to modify Bates by increasing the volume level selected by the user to one so that the volume is suited to the user needs.

Bates as modified by Hayama fails to disclose performing this method and comparing a number of volume levels. Jordan discloses that the number of volume levels is an arbitrary choice and that any number of volume levels may be chosen as best suited for an application (column 3, lines 35-38). It is obvious, then, that a designer of a system determines how that system will work. It would have been obvious to modify Bates as modified by Hayama to perform the method with a number of volume levels in order if best suited for a particular application.

All elements of claims 11 and 12 are comprehended by the rejection of claim 10.

9. Claims 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jordan (US 5,150,404).

Regarding claim 28, Jordan discloses, wherein the volume levels selectable by the user are independent of a previously selected volume level (Figure 3; column 2, lines 61-column 3, line 40). Jordan discloses that the number of volume levels is an arbitrary choice and that any one number of volume levels may be chosen as best suited for the application and that this is programmable at the manufacturer; implicit that someone sets the total number of volume levels ; column 3, lines 35-40). Since the number of volume levels is programmable it is obvious that it is up to the programmer

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as to how the volume data is stored. It would have been obvious to have the volume levels selected be independent of a previous selected volume level in order to meet a desired design specification.

Allowable Subject Matter

10. Claims 1,4,7,13,17 and 21 allowed.

The following is the examiner's statement of reasons for allowance:

Regarding claims 1,4,7,13,17 and 21, prior art Bironas et al. (US 5,513,268) discloses a variable digital control for electronic device with rotary switch control including a memory, a command and information unit, a sound output unit and of a sound increase/decrease interval. Prior art Katayama et al. (US 6,747,678) discloses an audio system and its control method. Prior art Hayama et al. (US 4,611,344) discloses an electronic volume control circuit. Prior art Sato et al. (US 4,527,230) discloses a method of controlling a set point. Prior art Shimizu et al. (US 2002/0031236) discloses an input apparatus, reproducing apparatus and volume adjusting method. Prior art Kato et al. (US 5,081,682) discloses an on-vehicle automatic loudness control apparatus. Prior art Ponto (US 4,239,938) discloses a multiple input signal digital attenuator for combined output. Prior art Sakanishi et al. (US 5,010,577) discloses an electronic volume device. Prior art Yochum (US 4,412,182) discloses an apparatus for controlling an operational characteristic of a controlled device in accordance with the position of a movable member. Prior art Ouchida (US 4,706,294) discloses an audio control device. Prior art Endoh et al. (US 4,270,177) discloses a digital amplitude control for digital

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audio signals. Prior art Ono (US 4,349,77) discloses a volume control apparatus.

Regarding claims 1,4,7,13,17,21, the prior art of combination thereof fails to disclose or make obvious wherein if the sound increase/decrease interval information is input from a command and information input unit, a system control unit stores the sound increase/decrease interval information in a memory when the sound increase/decrease interval is greater than a minimum increase/decrease interval set in a sound output system and less than a maximum increase/decrease interval set in the sound output system. Therefore, the prior art or combination thereof fails to disclose or make obvious a volume control apparatus and a volume control method as claimed.

Claims 3,8,9,19,23,24 are allowed due to dependency on claims 1,4,7,10,,17,21 and 25.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Devona E. Faulk whose telephone number is 571-272-7515. The examiner can normally be reached on 8 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on 571-272-7848.

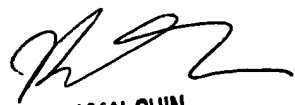
The Art Unit location of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this

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application should be directed to Art Unit 2615. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DEF


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